

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method of improving [[a]] picture quality in encoding of digitally compressed video, ~~said the~~ method comprising the steps of:

 encoding a sequence of picture information, one picture per time interval,

 into a coded representation as and locally reconstructed pictures ~~by one picture at every one time instance~~;

 filtering ~~said one of the~~ locally reconstructed ~~pictures~~ picture to obtain a locally filtered picture;

 selecting, based on an average value of a quantization parameter, a local reference picture from one ~~a group consisting of said the~~ locally reconstructed picture and ~~said the~~ locally filtered picture for ~~of~~ a same time ~~instance~~ interval;

 and

 using ~~said the~~ local reference picture ~~in order~~ to predict a motion compensation of a next picture in ~~said the~~ encoding step.

2. (Currently Amended) A method of improving [[a]] picture quality in decoding of digitally compressed video, ~~said the~~ method comprising the steps of:

 decoding a coded representation, one picture per time interval, into a sequence of reconstructed pictures ~~by one picture at every one time instance~~;

filtering said ~~one of the reconstructed pictures~~ picture to obtain a filtered picture;

selecting, based on an average value of a quantization parameter, a reference picture from ~~one a group consisting of said the~~ reconstructed picture and said ~~the~~ filtered picture ~~for of~~ a same time ~~instance~~ interval; and

using said ~~the~~ reference picture ~~in order~~ to predict a motion compensation of a next picture in said ~~the~~ decoding step.

3. (Currently Amended) A method of improving ~~[[a]]~~ picture quality of digitally compressed video, said ~~the~~ method comprising the steps of:

encoding a sequence of picture information, one picture per time interval, into a coded representation by ~~one picture at every one time instance~~;

decoding said ~~the~~ coded representation, one picture per time interval, into a sequence of reconstructed pictures by ~~one picture at every one time instance~~;

filtering said ~~one of the reconstructed pictures~~ picture to obtain a filtered picture;

selecting, based on an average value of a quantization parameter, a reference picture from ~~one a group consisting of said the~~ reconstructed picture and said ~~the~~ filtered picture ~~for of~~ a same time ~~instance~~ interval; and

using said ~~the~~ reference picture ~~in order~~ to predict a motion compensation of a next picture in said ~~the~~ decoding step.

4. (Currently Amended) A method of improving [[a]] picture quality in decoding of digitally compressed video, ~~said the~~ method comprising the steps of:

decoding a coded representation into a sequence of reconstructed pictures, ~~by one picture at every one~~ per time instance interval;

filtering ~~said one of the~~ reconstructed ~~pictures~~ picture to obtain a filtered picture;

selecting a display picture from a group consisting of ~~said the~~ reconstructed picture and ~~said the~~ filtered picture for ~~of~~ a same time ~~instance~~ interval;

sending ~~said the~~ display picture to an output of a decoder;

selecting a reference picture from a group consisting of ~~said the~~ reconstructed picture and ~~said the~~ filtered picture for ~~of~~ a same time ~~instance~~ interval; and

using ~~said the~~ reference picture ~~in order~~ to predict a motion compensation of a next picture in ~~said the~~ decoding step.

5. (Currently Amended) A method of improving [[a]] picture quality in decoding of digitally compressed video, ~~said the~~ method comprising the steps of:

decoding a coded representation into a sequence of reconstructed pictures, ~~by one picture at every one~~ per time instance interval;

filtering ~~said one of the~~ reconstructed ~~pictures~~ picture to obtain a filtered picture;

selecting a display picture from a group consisting of ~~said~~ the reconstructed picture and ~~said~~ the filtered picture of a same time ~~instance~~ interval;

sending ~~said~~ the display picture to an output of a decoder;

selecting a reference picture from a group consisting of ~~said~~ the reconstructed picture and ~~said~~ the display picture ~~for~~ of a same time ~~instance~~ interval; and

using ~~said~~ the reference picture ~~in order~~ to predict a motion compensation of a next picture in ~~said~~ the decoding step.

6. (Currently Amended) The method according to claim 1, wherein ~~said~~ step of obtaining ~~said~~ the filtered picture operates ~~works~~ on a sub-portion of the picture by comparing quantization parameters of each sub-portion of the picture.

7. (Currently Amended) The method according to claim 1, wherein ~~said~~ step of selecting ~~said~~ the reference picture comprises ~~the steps of~~:

deriving a switching criterion from the coded representation; and

using ~~said~~ the switching criterion for ~~said~~ the selection step.

8. (Currently Amended) The method according to claim 1, wherein ~~said~~ step of selecting ~~said~~ the reference picture comprises ~~the steps of~~:

deriving a switching criterion from the reconstructed picture; and

using ~~said~~ the switching criterion for ~~said~~ the selection step.

9. (Currently Amended) The method according to claim 7, wherein ~~said~~ step of deriving ~~said~~ the switching criterion comprises ~~the steps of:~~

extracting a plurality of quantization parameters from the coded representation;

calculating ~~the an~~ an average quantization parameter for the picture; and

comparing ~~said~~ the average quantization parameter to a predefined threshold.

10. (Currently Amended) The method according to claim 7, wherein ~~said~~ step of deriving ~~said~~ the switching criterion comprises ~~the steps of:~~

extracting a plurality of quantization parameters from the coded representation;

calculating ~~the an~~ an average quantization parameter for the picture; and

comparing ~~said~~ the average quantization parameter to a plurality of predefined ~~threshold~~ thresholds.

11. (Currently Amended) The method according to claim 9, further comprising ~~the steps of:~~

producing an output image that is filtered ~~if said~~ when the quantization parameter is above a first threshold; and

storing said the reference picture that is filtered ~~if said~~ when the quantization parameter is above a second threshold.

12. (Currently Amended) An apparatus for improving [[a]] picture quality in encoding of digitally compressed video, said apparatus comprising:

~~an~~ encoding means for encoding a sequence of picture information, one picture per time interval, into a coded representation of ~~and~~ locally reconstructed pictures ~~by one picture at every one time instance~~;

[[a]] means for filtering one of said locally reconstructed pictures ~~picture~~ to obtain a locally filtered picture;

[[a]] means for selecting, based on an average value of a quantization parameter, a local reference picture from one ~~a group consisting of~~ said locally reconstructed picture and said locally filtered picture for ~~of~~ a same time ~~instance~~ interval; and

[[a]] means for using said local reference picture ~~in order~~ to predict a motion compensation of a next picture in said encoding means.

13. (Currently Amended) An apparatus for improving [[a]] picture quality in decoding of digitally compressed video, said apparatus comprising:

[[a]] decoding means for decoding a coded representation, one picture per time interval, into a sequence of reconstructed pictures ~~by one picture at every one time instance~~;

[[a]] means for filtering one of said reconstructed ~~pictures~~ picture to obtain a filtered picture;

[[a]] means for selecting, based on an average value of a quantization parameter, a reference picture from one ~~a group consisting of~~ said reconstructed picture and said filtered picture for ~~of~~ a same time ~~instance~~ interval; and

[[a]] means for using said reference picture ~~in order~~ to predict a motion compensation of a next picture in said decoding means.

14. (Currently Amended) An apparatus for improving [[a]] picture quality of digitally compressed video, said apparatus comprising:

~~an~~ encoding means for encoding a sequence of picture information, one picture per time interval, into a coded representation ~~by one picture at every one time instance~~;

[[a]] decoding means for decoding said coded representation, one picture per time interval, into a sequence of reconstructed pictures ~~by one picture at every one time instance~~;

[[a]] means for filtering one of said reconstructed pictures picture to obtain a filtered picture;

[[a]] means for selecting, based on an average value of a quantization parameter, a reference picture from a one group ~~consisting of~~ said reconstructed picture and said filtered picture for ~~of~~ a same time ~~instance~~ interval; and

[[a]] means for using said reference picture ~~in order~~ to predict a motion compensation of a next picture in said decoding means.

15. (Currently Amended) An apparatus for improving [[a]] picture quality in decoding of digitally compressed video, said apparatus comprising:

[[a]] decoding means for decoding a coded representation into a sequence of reconstructed pictures, ~~by one picture at every~~ per one time instance interval;

[[a]] means for filtering one of said reconstructed pictures picture to obtain a filtered picture;

[[a]] means for selecting a display picture from a group consisting of said reconstructed picture and said filtered picture for ~~of~~ a same time ~~instance~~ interval;

[[a]] means for sending said display picture to an output of a decoder;

[[a]] means for selecting a reference picture from a group consisting of said reconstructed picture and said filtered picture for ~~of~~ a same time ~~instance~~ interval;
and .

[[a]] means for using said reference picture ~~in order~~ to predict a motion compensation of a next picture in said decoding means.

16. (Currently Amended) An apparatus for improving [[a]] picture quality in decoding of digitally compressed video, said apparatus comprising:

[[a]] decoding means for decoding a coded representation into a sequence of reconstructed pictures, ~~by one picture at every~~ per one time instance interval;

[[a]] means for filtering one of said reconstructed pictures ~~picture~~ to obtain a filtered picture;

[[a]] means for selecting a display picture from a group consisting of said reconstructed picture and said filtered picture for ~~of~~ a same time instance interval;

[[a]] means for sending said display picture to an output of a decoder;

[[a]] means for selecting a reference picture from a group consisting of said reconstructed picture and said display picture for ~~of~~ a same time instance interval;
and

[[a]] means for using said reference picture ~~in order~~ to predict a motion compensation of a next picture in said decoding means.

17. (Currently Amended) The apparatus according to claim 12, wherein said means for obtaining said filtered picture operates ~~works~~ on a sub-portion of the picture by comparing quantization parameters of each sub-portion of the picture.

18. (Currently Amended) The apparatus according to claim 12, wherein said means for selecting said reference picture comprises:

[[a]] means for deriving a switching criterion from the coded representation; and

[[a]] means for using said switching criterion for said selection means.

19. (Currently Amended) The apparatus according to claim 12, wherein said means for selecting said reference picture comprises:

[[a]] means for deriving a switching criterion from the reconstructed picture; and

[[a]] means for using said switching criterion for said selection means.

20. (Currently Amended) The apparatus according to claim 18, wherein said means for deriving said switching criterion comprises:

[[a]] means for extracting a plurality of quantization parameters from the coded representation;

[[a]] means for calculating said an average quantization parameter for the one of the reconstructed pictures ~~picture~~; and

[[a]] means for comparing said average quantization parameter to a predefined threshold.

21. (Currently Amended) The apparatus according to claim 18, wherein said means for deriving said switching criterion comprises:

[[a]] means for extracting a plurality of quantization parameters from the coded representation;

[[a]] means for calculating said ~~an~~ average quantization parameter for the one of the reconstructed pictures ~~picture~~; and

[[a]] means for comparing said average quantization parameter to a plurality of predefined thresholds ~~threshold~~.

22. (Currently Amended) The apparatus according to claim 20, further comprising:

[[a]] means for producing an output image that is filtered when ~~if~~ said quantization parameter is above a specified higher threshold; and

[[a]] means for storing said reference picture that is filtered when ~~if~~ said quantization parameter is below a specified ~~specifies~~ lower threshold.

23. (New) An apparatus for improving picture quality in encoding of digitally compressed video, said apparatus comprising:

an encoder that encodes a sequence of picture information, one picture per time interval, into a coded representation of locally reconstructed pictures;

a filter that filters one of said locally reconstructed pictures to obtain a locally filtered picture;

a selector that selects, based on an average value of a quantization parameter, a local reference picture from one of said locally reconstructed picture and said locally filtered picture for a same time interval; and

a predictor that uses said local reference picture to predict a motion compensation of a next picture in said encoder.

24. (New) An apparatus for improving picture quality in decoding of digitally compressed video, said apparatus comprising:

a decoder that decodes a coded representation, one picture per time interval, into a sequence of reconstructed pictures;

a filter that filters one of said reconstructed pictures to obtain a filtered picture;

a selector that selects, based on an average value of a quantization parameter, a reference picture from one of said reconstructed picture and said filtered picture for a same time interval; and

a predictor that uses said reference picture to predict a motion compensation of a next picture in said decoder.

25. (New) An apparatus for improving picture quality of digitally compressed video, said apparatus comprising:

an encoder that encodes, one picture per time interval, a sequence of picture information into a coded representation;

a decoder that decodes, one picture per time interval, said coded representation into a sequence of reconstructed pictures;

a filter that filters one of said reconstructed pictures to obtain a filtered picture;

a selector that selects, based on an average value of a quantization parameter, a reference picture from one of said reconstructed picture and said filtered picture for a same time interval; and

a predictor that uses said reference picture to predict a motion compensation of a next picture in said decoder.

26. (New) An apparatus for improving picture quality in decoding of digitally compressed video, said apparatus comprising:

a decoder that decodes, one picture per time interval, a coded representation into a sequence of reconstructed pictures;

a filter that filters one of said reconstructed pictures to obtain a filtered picture;

a selector that selects a display picture from one of said reconstructed picture and said filtered picture for a same time interval;

a sender that sends said display picture to an output of a decoder;

a selector that selects a reference picture from a group consisting of said reconstructed picture and said filtered picture for a same time interval; and

a predictor that uses said reference picture to predict a motion compensation of a next picture in said decoder.

27. (New) An apparatus for improving picture quality in decoding of digitally compressed video, said apparatus comprising:

a decoder that decodes, one picture per time interval, a coded representation into a sequence of reconstructed pictures;

a filter that filters one of said reconstructed pictures to obtain a filtered picture;

a selector that selects a display picture from one of said reconstructed picture and said filtered picture for a same time interval;

a sender that sends said display picture to an output of a decoder;

a selector that selects a reference picture from a group consisting of said reconstructed picture and said display picture for a same time interval; and

a predictor that uses said reference picture to predict a motion compensation of a next picture in said decoder.

28. (New) The apparatus according to claim 23, wherein said filter operates on a sub-portion of the picture by comparing quantization parameters of each sub-portion of the picture.

29. (New) The apparatus according to claim 23, wherein said selector comprises:

a deriver that derives a switching criterion from the coded representation, wherein said selector uses said switching criterion.

30. (New) The apparatus according to claim 23, wherein said selector comprises:

a deriver that derives a switching criterion from the reconstructed picture, wherein said selector uses said switching criterion.

31. (New) The apparatus according to claim 29, wherein said deriver comprises:

an extractor that extracts a plurality of quantization parameters from the coded representation;

a calculator that calculates said average quantization parameter for one of the reconstructed pictures; and

a comparer that compares said average quantization parameter to a predefined threshold.

32. (New) The apparatus according to claim 29, wherein said deriver comprises:

an extractor that extracts a plurality of quantization parameters from the coded representation;

a calculator that calculates said average quantization parameter for one of the reconstructed pictures; and

a comparer that compares said average quantization parameter to a plurality of predefined thresholds.

33. (New) The apparatus according to claim 31, further comprising:

a producer that produces an output image that is filtered when said quantization parameter is above a specified higher threshold; and

a storage that stores said reference picture that is filtered when said quantization parameter is below a specified lower threshold.